

In the Claims

1 1. (Currently Amended) A ~~system~~ physical computer-readable
2 medium comprising code for processing boundary information of a graphical
3 object, the code comprising:
4 code for receiving a graphical image that comprises said graphical object
5 wherein said graphical object is defined by at least said boundary information;
6 code for detecting a plurality of contours between respective pairs of
7 points of said graphical image, wherein individual ones of the contours are
8 detected responsive to respective user input of a user, and wherein said code for
9 detecting comprises a predetermined function operable to calculate gradients
10 associated with said graphical image, wherein said calculated gradients are
11 calculated over respective spatial areas of said graphical image limited by a scale
12 parameter; and
13 code for determining a plurality of vertices from said boundary
14 information, wherein respective contours, which are between adjacent vertices
15 of said plurality of vertices and are detected by said code for detecting,
16 approximate respective edges of said boundary information within a distortion
17 criterion.

1 2. (Currently Amended) The ~~system~~ medium of claim 1 further
2 comprising:
3 code for creating an approximated boundary utilizing at least said
4 graphical image, said plurality of vertices, and said code for detecting.

1 3. (Canceled).

1 4. (Currently Amended) The ~~system~~ medium of claim 1 wherein said
2 code for detecting is operable to determine a shortest path between said pair of
3 points, wherein said shortest path is weighted by said calculated gradients.

PDNO. 10014091-1
Serial No. 10/046,797
Amendment C

1 5. (Currently Amended) The ~~system~~ medium of claim 4 wherein said
2 code for detecting limits its determination of the shortest path to a rectangular
3 area defined in part by a width parameter.

1 6. (Canceled).

1 7. (Currently Amended) The ~~system~~ medium of claim 1 wherein said
2 code for detecting implements a Rubberband function in executable instructions.

1 8. (Currently Amended) The ~~system~~ medium of claim 1 wherein said
2 code for determining only analyzes points of said boundary information that are
3 associated with respective edges that are less than a heuristic value.

1 9. (Currently Amended) The ~~system~~ medium of claim 1 wherein said
2 code for determining only analyzes vertex pairs associated with edges of an
3 edge set that is a weighted acyclic graph.

1 10. (Currently Amended) The ~~system~~ medium of claim 1 wherein said
2 code for determining a plurality of vertices only analyzes vertices from a
3 searchable set of vertices.

1 11. (Currently Amended) The ~~system~~ medium of claim 1 wherein said
2 searchable set of vertices only includes: (a) vertices associated with curvature
3 greater than a first heuristic value and (b) vertices recursively grown by
4 maximizing distances between adjacent vertices subject to the following
5 constraints: (i) said maximizing distances are less than a second heuristic value
6 and (ii) each contours between adjacent vertices detected by said code for
7 detecting approximate respective edges of said boundary information within a
8 distortion criterion.

PDNO. 10014091-1
Serial No. 10/046,797
Amendment C

1 12. (Previously Presented) A method for processing boundary
2 information of a graphical object, comprising:
3 receiving a graphical image that comprises said graphical object, wherein
4 said graphical object is defined by at least said boundary information;
5 determining a plurality of vertices from said boundary information,
6 wherein adjacent vertices of said plurality of vertices are associated with
7 respective contours that approximate respective edges of said boundary
8 information within a distortion criterion, wherein said respective contours are
9 detected by analysis of said graphical image by a predetermined function and
10 responsive to different user input for respective individual ones of the contours,
11 wherein said predetermined function is operable to calculate gradients calculated
12 from said graphical image utilizing a pixel neighborhood defined by a scale
13 parameter;
14 encoding at least said plurality of vertices in a data structure to represent
15 said boundary information; and
16 converting graphical information of the data structure from a first format
17 to a second format different than the first format.

1 13. (Previously presented) The method of claim 12 wherein said
2 predetermined function is operable to determine a shortest path between
3 adjacent vertices, wherein said shortest path is weighted by the gradients
4 calculated from said graphical image.

1 14. (Original) The method of claim 13 wherein said predetermined
2 function is operable to determine said shortest path from only a spatial area
3 defined by at least a width parameter.

1 15. (Canceled).

1 16. (Original) The method of claim 12 wherein said determining
2 comprises identifying a point of said boundary information that is associated
3 with a greatest amount of curvature.

PDNO. 10014091-1
Serial No. 10/046,797
Amendment C

1 17. (Original) The method of claim 12 wherein said determining only
2 analyzes vertex pairs associated with edges that are shorter than a heuristic
3 value.

1 18. (Original) The method of claim 12 wherein said determining only
2 selects vertices from a searchable set of vertices.

1 19. (Original) The method of claim 18 wherein said searchable set of
2 vertices only includes: (a) vertices associated with curvature greater than a first
3 heuristic value and (b) vertices recursively grown by maximizing distances
4 between adjacent vertices subject to the following constraints: (i) said
5 maximizing distances are less than a second heuristic value and (ii) respective
6 contours between adjacent vertices approximate respective edges of said
7 boundary information within a distortion criterion.

1 20. (Currently Amended) A method for processing boundary
2 information associated with an object in a graphical image, said method
3 comprising:

4 identifying two vertices in said graphical image;
5 detecting a plurality of contours between said two vertices by
6 determining a respective shortest path between said two vertices, said
7 respective shortest path being weighted by gradient calculations that utilize a
8 pixel neighborhood defined by a scale parameter of said graphical image over
9 regions defined at least by a ~~pixel neighborhood and a~~ the scale parameter, and
10 each contour of said plurality of contours being associated with a respective
11 scale parameter of a plurality of scale parameters; and

12 selecting an optimal scale parameter from said plurality of scale
13 parameters by determining a scale parameter from said plurality of scale
14 parameters that minimizes variance between regions defined by its respective
15 contours.

PDNO. 10014091-1
Serial No. 10/046,797
Amendment C

1 21. (Original) The method of claim 20 wherein said method further
2 comprising:
3 encoding a boundary object utilizing said two vertices and said optimal
4 scale parameter.

1 22. (Original) The method of claim 20 wherein said detecting further
2 comprising:
3 incrementally detecting a contour of said plurality of contours by utilizing
4 a threshold value, wherein said shortest path is determined by a graph searching
5 process that limits searching of paths to distances less than said threshold
6 value.

1 23. (Previously Presented) The method of claim 20 wherein said
2 detecting a plurality of contours is operable to only select contours within a
3 rectangular area defined by a width parameter and said two vertices.

1 24. (Previously Presented) The method of claim 23 wherein said width
2 parameter and said two vertices are selected by a user interface.

1 25. (Currently Amended) The ~~system~~ medium of claim 1 wherein the
2 user input is different for individual ones of the contours.

1 26. (Currently Amended) The ~~system~~ medium of claim 1 wherein the
2 user input selects an area of the graphical image wherein searching for the
3 contours is performed.

1 27. (Currently Amended) The ~~system~~ medium of claim 26 wherein the
2 graphical image has an associated area, and the selected area comprises an area
3 less than an entirety of the area of the graphical image.

1 28. (Currently Amended) The ~~system~~ medium of claim 26 wherein the
2 user input selects, for individual ones of the contours, at least one of the
3 respective vertices and a width of the area.

PDNO. 10014091-1
Serial No. 10/046,797
Amendment C

1 29. (Previously Presented) The method of claim 12 wherein the user
2 input is different for individual ones of the contours.

1 30. (Previously Presented) The method of claim 12 wherein the
2 predetermined function comprises a Rubberband function.

1 31. (Previously Presented) The method of claim 20 wherein the
2 detected contours approximate respective edges of the boundary information.

1 32. (Previously Presented) The method of claim 31 wherein the edges
2 of the boundary information exist before the detecting.

1 33. (Currently Amended) A computer comprising:
2 a display configured to depict a graphical image comprising a graphical
3 object;
4 a user interface configured to receive user input; and
5 processing circuitry coupled with the display and configured to determine
6 a plurality of vertices using boundary information of the graphical object, and to
7 detect a plurality of contours between respective pairs of the vertices responsive
8 to respective user input received via the user interface, wherein the contours
9 approximate respective edges of the boundary information of the graphical
10 object within a distortion criterion, and wherein said processing circuitry includes
11 is configured to implement a predetermined function operable to calculate
12 gradients associated with said graphical image, wherein said calculated gradients
13 are calculated over respective spatial areas of said graphical image limited by a
14 scale parameter.

1 34. (Previously Presented) The computer of claim 33 wherein the user
2 input is different for individual ones of the contours.

1 35. (Previously Presented) The method of claim 12 further comprising
2 extracting the graphical information defined by the boundary information from
3 the graphical image.

PDNO. 10014091-1
Serial No. 10/046,797
Amendment C

- 1 36. (Previously Presented) The method of claim 35 wherein the
- 2 extracting comprises extracting a subset of the graphical information of the
- 3 graphical image comprising less than an entirety of the graphical information of
- 4 the graphical image.

PDNO. 10014091-1
Serial No. 10/046,797
Amendment C